

DISTRICT HEALTH DEPARTMENT NO. 2

HANDOUT FOR SITES WITH CLAY SOILS

Clay soils are normally not permeable enough to transmit liquids in the quantities applied by a residential sewage disposal and treatment system. Therefore, special considerations are necessary if a sewage disposal system is to be constructed on a site with clay soils. Site preparation and workmanship is crucial to how well the system will function.

1. Site Preparation

- Do not disturb the site or remove any soils prior to health department evaluation.
- All native soils must remain in place unless otherwise specified on the permit.
- Any excavation allowed in the disposal system and berm area will be specified on the permit.
- Do not remove any topsoil in the sewage disposal system area unless specified on the permit.
- Do not add any fill material prior to health department authorization (approval).
- Do not allow any vehicular traffic in the sewage disposal system area.
- Do not compact, smear, or mix soils.
- Do not work up soils when soil is wet or when it is raining.
- Sewage disposal system should not be constructed when frost or frozen ground is present.
- Grass should be cut very short when sod layer is to remain in place.
- Trees must be removed carefully so as not to remove topsoil or compact and smear soils.
- Stumps may need to be cut off at grade and left in place.
- Use light weight equipment with a chisel plow or disc to work up sod in place OR rake it with teeth of a backhoe/excavator bucket – do not roto till.

2. System Installation

- Fill material under drainfield is to be clean, coarse sand.
- Sand fill is to be dumped on the edge of the berm and pushed into place with a dozer keeping the tracks of the dozer on at least six (6") inches of sand fill at all times.
- Stone should be added by driving carefully over the sand fill and placing it with a bucket.
- Drain lines should be set dead level.

3. Locating a System on a Clay Site

- Place the system on hill tops or high on hill sides (if slope permits) and out of drainage areas.
- Berm areas should extend at least 20 feet on all sides and 20-50 feet on the downhill side.
- All surface water runoff must be diverted.

4. General Site Considerations

- a. Prior to placing a drainfield on clay soils consideration must be given to utilizing deep cuts through to permeable soils or pumping the effluent to an area that has permeable soils.
- b. Replacement areas are very important as replacing a drainfield in clay soils in the exact spot as the original may result in premature failure.
- c. The finished drainfield area should have topsoil and be seeded with grass.
- d. Water conservation is very important for the homeowners. Usage of large volumes of water in the home may overload the clay soils and cause occasional leakage or premature failure.

5. Sites may be denied based on any of the following conditions

- a. Where topsoil is removed and no permeable soil remains over native clay.
- b. Where water ponds on top of drainfield site due to water table, flooding, or runoff.
- c. Where topsoil has been compacted by vehicular traffic.
- d. Where slope is excessive (e.g. $\geq 6\%$).